

(A) is at least 50% identical with the sequence of a first reference vertebrate growth hormone, and

(B) differs therefrom solely in that

(I) the amino acid position corresponding to amino acid Gly119 of bovine growth hormone is an amino acid other than glycine or alanine, and

(II) any additional differences, if any, between said amino acid sequence and the amino acid sequence of said first vertebrate growth hormone, are independently selected from the group consisting of

(a) a substitution of a conservative replacement amino acid for the corresponding first reference vertebrate growth hormone residue,

(b) a substitution of a non-conservative replacement amino acid for the corresponding first reference vertebrate growth hormone residue where

(i) a second reference vertebrate growth hormone exists for which the corresponding amino acid is a non-conservative substitution for the corresponding first reference vertebrate growth hormone residue, and/or

(ii) the binding affinity for the first reference vertebrate growth hormone's receptor of a single substitution mutant of the first reference vertebrate growth hormone, wherein said corresponding residue, which is not alanine, is replaced by alanine, is at least 10% of the binding affinity of the wild-type first reference vertebrate growth hormone,

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Cont.

- (c) a deletion of a residue which is not part of the alpha helices of said reference vertebrate growth hormone corresponding to helices 1(7-34), 2(75-87), 3(106-127) and 4(152-183) of porcine growth hormone, such deleted residue furthermore not being a conserved residue in the vertebrate GH family, and
- (d) a deletion of a residue found in said first reference vertebrate growth hormone but deleted in a second reference vertebrate growth hormone,

said polypeptide having growth hormone receptor antagonist activity,

with the proviso that said first and second reference vertebrate growth hormones are both mammalian growth hormones.

67. The DNA molecule of claim 66 wherein the differences as specified in (B)(II) are solely amino acid substitutions as set forth in (a) and (b).

68. The DNA molecule of claim 66 wherein for all non-conservative substitutions, both of conditions (II)(b)(i) and (II)(b)(ii) apply.

69. The DNA molecule of claim 66 wherein all substitutions are conservative substitutions as defined in II(a).

70. The DNA molecule of claim 66 wherein said amino acid sequence having at least about a 66% identity with the sequence of said first reference mammalian growth hormone.

71. The DNA molecule of claim 66 wherein said amino acid sequence having at least about a 80% identity with the sequence of said first reference mammalian growth hormone.

72. The DNA molecule of claim 66 wherein said amino acid sequence is at least about 90% identical to the amino acid sequence of said first reference mammalian growth hormone.

73. The DNA molecule of claim 66 where said first reference vertebrate growth hormone is human or bovine growth hormone.